

Math 212
Quiz 09

M 12 Sep 2016

Your name: _____

Exercise

(2 pt) Consider the function $f : \mathbf{R}^2 \rightarrow \mathbf{R}$ given by

$$f(x, y) = x^2 + \frac{y^2}{4} + 1.$$

- (a) (1 pt) For what values of c is the level set $LS_f(c)$ empty? *Hint:* What output values can f *not* give?
- (b) (1 pt) Draw three nonempty level sets $LS_f(c)$ of f in the xy -plane, labeled with their corresponding values c .